ACOUSTICAL ANALYSIS ASSOCIATES, INCORPORATED

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AAAI Project 88018

QUARTERLY NOISE MONITORING AT BURBANK AIRPORT FOURTH QUARTER 1998

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February 1999

Prepared for:

BURBANK GLENDALE PASADENA AIRPORT

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FEBRUARY 1999

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FOURTH QUARTER 1998

I. INTRODUCTION

In compliance with the California Noise Standards (Reference 1) and the current variance from certain provisions of the Standards (Reference 2), the operator of the Burbank Airport is required to perform noise monitoring in the vicinity of the airport for the purpose of establishing a noise impact boundary. The Noise Standards currently specify a community noise equivalent level (CNEL) of 65 dB for the noise impact boundary[1]. The airport is required to provide, each quarter, an updated annual noise impact contour based on measurement data over the four preceding quarters.

A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. The original noise monitor sites have remained unchanged (with the exception of Site 8 that was moved about 15 feet because of construction). Two sites were added east of the airport in late 1980. Four sites were added south of the airport in January 1986 in response to the requirement to determine the 65 dB contour. Three more locations were added in February 1997. Two of these, identified as 16 and 17, are south of the airport, and one, 18, is to the west. The site to the west replaces Site 8. These locations were added to permit monitoring closer to the 65 dB contour. The noise monitoring computer at the airport was replaced in August 1995.

This report describes the data acquired by the monitoring system during the Fourth quarter of 1998. Noise impact boundaries for

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[1] Prior to January 1, 1986, a CNEL of 70 dB defined the noise impact boundary.

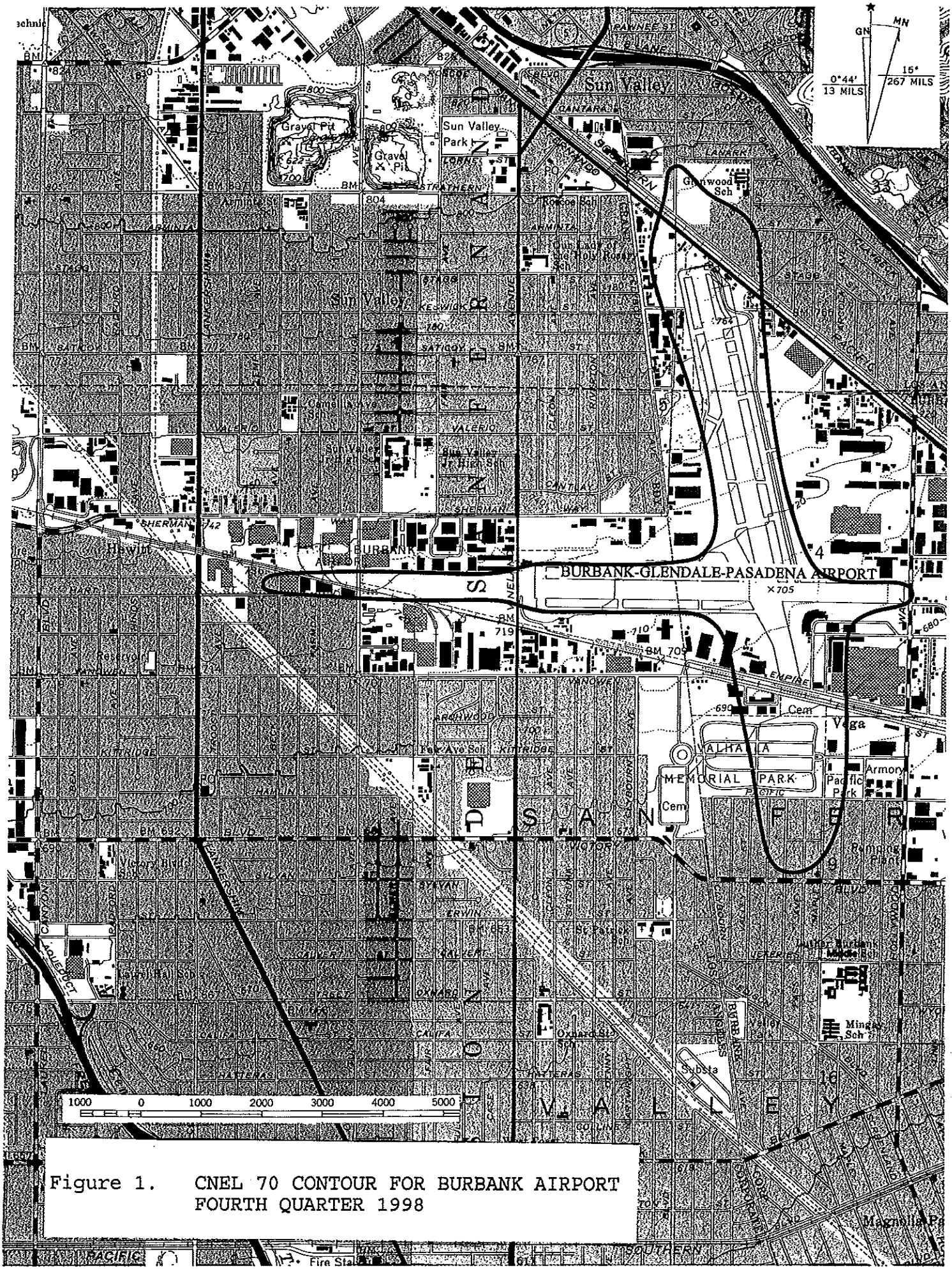

Figure 1. CNEL 70 CONTOUR FOR BURBANK AIRPORT FOURTH QUARTER 1998

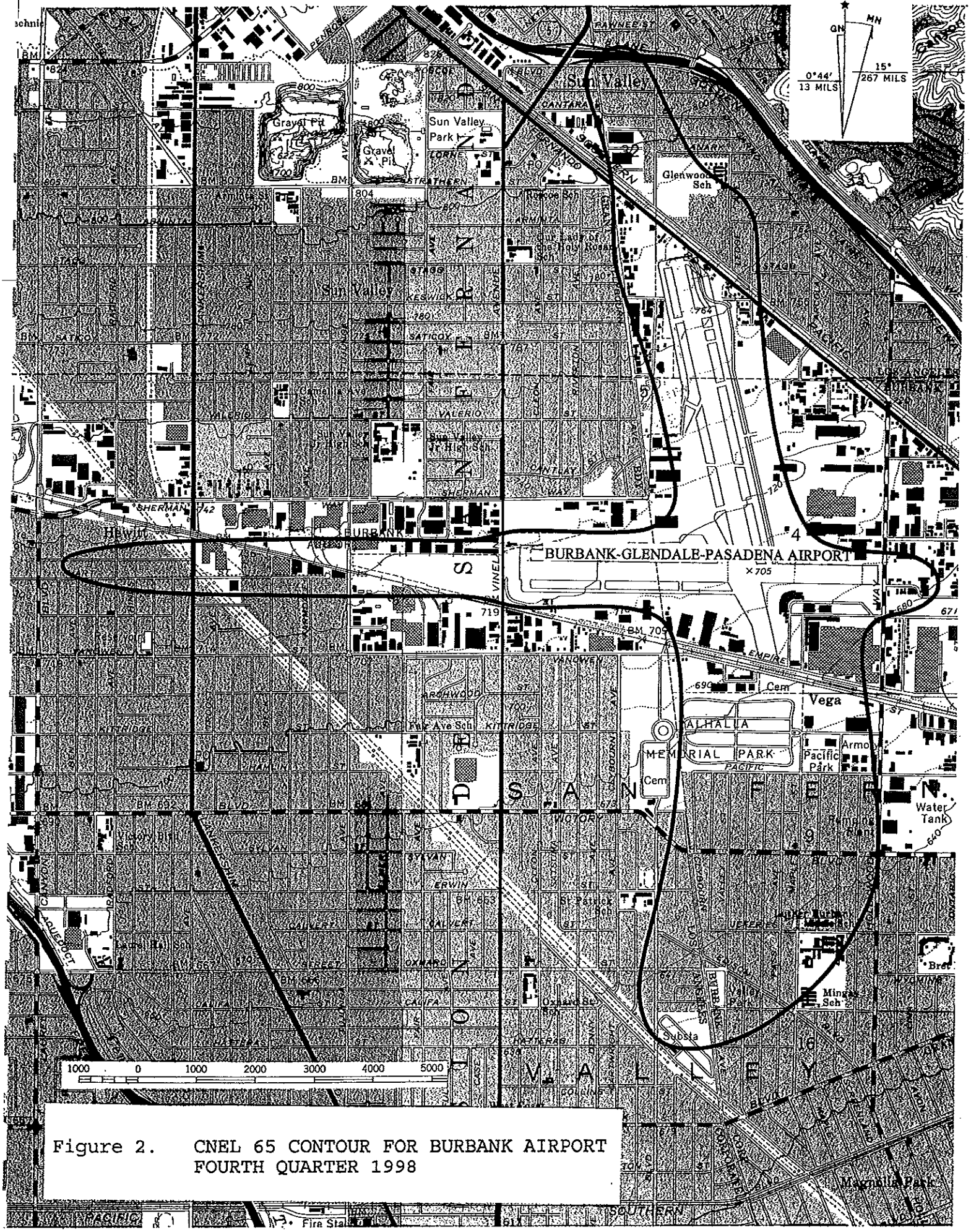

Figure 2. CNEL 65 CONTOUR FOR BURBANK AIRPORT FOURTH QUARTER 1998

65 dB and 70 dB are shown based on these measurements and measurements obtained during the first, second and third quarter of 1998 reported in References 3, 4 and 5. Figure 1 shows the 70 dB contour and Figure 2 shows the 65 dB contour, based on the measured noise data.

II. NOISE MEASUREMENTS

A. Sites

Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. The noise monitor sites are shown in Figure 3. No data were recorded at Site 8 after Site 18 became active. The site is still shown on this figure.

B. Noise Measurement Equipment

Each of the microphone locations uses an identical set of equipment connected to a central control unit. The noise level at each site is digitized and transmitted by phone line to the central site. The computer at the central site processes the data to produce (among other measures) the CNEL at each site. Appendix A provides a brief description of the system.

C. Noise Data

Electrical power and phone line interruptions occurred several times during the quarter resulting in loss of data. Tables 1, 2, and 3 show each site monitoring RMS "OFF" if the site was operating for less than 94% of the time. The data for these days were excluded from the averages.

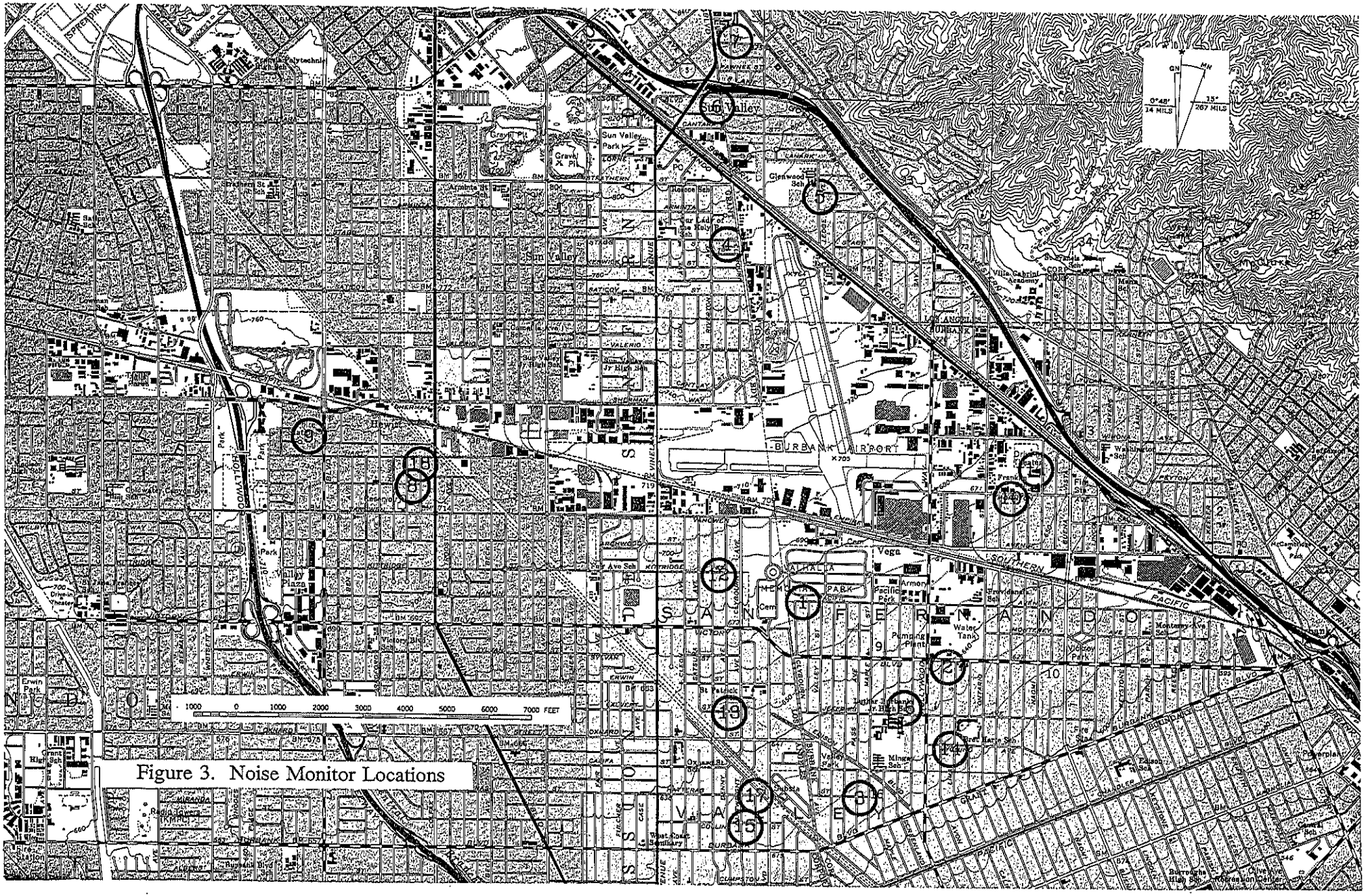

Figure 3. Noise Monitor Locations

D. Operational Data

Detailed departure and arrival logs are provided by the airlines. Operations of other jet aircraft are determined from air traffic strips provided by the FAA at Burbank Tower. In addition, flight schedules and logs of nighttime operations are provided by airport personnel.

III. MEASURED NOISE DATA

Daily CNEL values for the noise monitoring system are listed in Tables 1, 2, and 3. Table 4 lists the average values for each quarter together with the annual average.

IV. SCHEDULED AIRLINE AND COMMUTER OPERATIONS

The scheduled air carrier and commuter operations for the quarter are shown in Table 5.

V. CNEL CONTOUR DEVELOPMENT

The contours shown in Figures 1 and 2 are based upon computer-generated "master" contours which are adjusted to reflect the monitoring data. This fourth quarter 1998 used the master contours produced by Version 5.1 of the Integrated Noise Model (INM), a sophisticated aircraft noise modeling program developed for the Federal Aviation Administration. Inputs to the program consist of aircraft types and performance data, flight paths, numbers of operations, and day/evening/night distribution of flights. The program calculates CNEL values at equally spaced grid points and produces CNEL contour lines at 1 dB intervals. The annual average CNEL values at each site were marked at the appropriate locations on the contour map and the locations of the 65 and 70 dB CNEL contours were determined in the vicinity of each measuring point. These points were then joined following the general shape of the computed contours.

The master contours, used in developing the contours for this quarter are based on operations for the 12-month period from January 1995 through December 1995.

TABLE 1. CNEL VALUES FOR OCTOBER 1998

	RMS NUMBER																	
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
10/01/98	69.6	63.6	64.4	64.0	62.7	63.6	58.1	0.0	65.0	61.6	59.0	56.8	64.1	61.1	65.4	66.3	65.6	67.6
10/02/98	69.1	64.3	64.6	62.9	65.3	66.2	59.1	0.0	65.9	59.5	53.2	56.9	64.4	61.8	65.2	66.5	65.1	66.7
10/03/98	66.5	61.5	61.6	59.2	62.0	59.2	58.2	0.0	64.0	58.2	54.8	55.0	60.6	58.3	66.9	64.1	61.8	66.3
10/04/98	67.2	64.3	65.9	65.1	66.2	62.9	64.5	0.0	63.5	56.4	51.5	55.6	62.0	61.6	65.2	67.4	65.0	64.4
10/05/98	66.5	62.1	61.9	62.9	64.3	65.7	62.4	0.0	61.4	60.3	59.5	54.9	60.3	59.1	62.1	64.5	61.6	64.5
10/06/98	67.7	62.0	62.6	62.1	63.3	63.9	62.2	0.0	60.2	63.0	55.8	55.5	61.7	59.9	62.7	64.5	62.3	65.8
10/07/98	67.8	62.5	62.3	63.2	66.6	66.5	63.3	0.0	60.8	62.3	57.0	58.5	61.7	59.7	64.5	64.5	62.2	63.1
10/08/98	68.1	63.6	63.2	63.7	64.3	63.9	63.6	0.0	61.6	61.8	57.7	56.4	62.7	59.8	63.7	65.1	63.3	63.6
10/09/98	69.3	65.5	66.5	64.3	65.7	64.9	65.3	0.0	64.0	62.0	60.1	58.4	65.2	62.7	66.7	68.2	66.4	67.3
10/10/98	68.6	64.3	66.7	63.5	64.0	61.6	59.5	0.0	63.0	57.7	53.7	57.9	62.4	61.4	67.3	67.9	66.5	64.5
10/11/98	67.4	63.7	64.7	62.4	63.9	61.9	63.2	0.0	64.1	54.7	49.0	55.7	61.6	61.1	64.9	66.8	64.4	65.1
10/12/98	67.8	61.6	62.4	65.0	64.9	65.7	62.9	0.0	64.4	57.8	54.1	55.8	61.2	58.6	63.1	64.1	63.0	65.8
10/13/98	68.2	62.3	63.0	63.8	64.9	65.3	63.2	0.0	64.4	60.9	58.1	57.1	63.9	62.0	64.7	64.8	65.0	66.6
10/14/98	69.7	63.4	63.5	65.3	65.7	68.0	62.6	0.0	65.0	59.6	55.2	58.8	65.0	60.2	65.2	65.4	65.3	65.5
10/15/98	68.3	64.6	65.6	64.9	66.9	65.9	61.6	0.0	64.4	62.9	58.9	59.4	64.4	62.0	66.3	67.3	66.3	65.3
10/16/98	69.4	65.3	65.9	65.9	66.5	67.7	65.5	0.0	63.7	64.4	60.2	58.9	64.3	62.4	65.4	67.6	65.9	65.8
10/17/98	64.2	59.6	60.7	60.3	61.9	62.9	61.2	0.0	59.5	57.0	54.7	53.5	58.5	56.3	63.0	62.5	63.4	66.1
10/18/98	65.6	62.1	62.7	65.4	66.9	60.0	61.3	0.0	63.2	53.4	53.5	55.0	59.2	58.9	62.9	64.4	62.5	65.4
10/19/98	66.0	61.8	62.0	63.8	64.3	65.3	64.2	0.0	62.6	61.0	58.8	56.4	60.7	58.9	62.7	64.4	62.3	64.1
10/20/98	68.1	62.1	62.3	63.4	65.2	65.7	62.9	0.0	62.1	61.5	59.6	58.3	62.7	60.0	64.1	64.5	63.7	64.2
10/21/98	69.2	62.2	62.9	65.3	64.2	64.5	58.4	0.0	65.5	64.5	57.2	56.6	64.7	60.3	64.2	64.8	65.1	66.4
10/22/98	69.2	63.6	64.0	64.1	65.6	64.3	60.6	0.0	65.1	61.9	58.2	57.3	64.3	60.3	65.5	65.9	65.8	66.6
10/23/98	67.5	64.7	65.0	62.4	63.5	63.5	62.0	0.0	64.1	62.3	60.4	56.6	60.0	61.9	63.8	67.0	63.8	66.2
10/24/98	66.2	62.7	62.7	60.6	64.0	64.8	60.2	0.0	61.2	58.2	57.0	56.1	60.0	59.3	62.2	64.9	62.0	63.4
10/25/98	66.9	59.6	60.6	64.5	67.3	70.5	65.9	0.0	61.6	52.6	52.6	57.7	58.7	59.2	60.6	67.2	59.6	66.0
10/26/98	68.1	63.2	63.6	62.4	63.3	65.1	63.5	0.0	65.0	61.3	56.5	58.0	62.9	60.2	64.6	66.0	64.8	66.6
10/27/98	68.5	64.8	63.9	63.8	65.2	66.4	63.6	0.0	63.6	61.1	57.7	57.5	64.3	61.6	64.7	66.3	64.7	64.7
10/28/98	68.3	64.6	65.7	62.8	64.5	65.6	64.0	0.0	62.8	63.3	59.3	58.0	63.7	61.7	65.7	67.5	65.3	66.7
10/29/98	68.4	63.5	63.9	63.6	64.9	66.4	61.3	0.0	65.2	65.7	58.9	57.2	63.8	60.7	65.6	66.0	65.4	66.2
10/30/98	67.7	64.0	65.1	63.9	65.5	67.4	62.6	0.0	65.0	64.1	59.7	58.4	60.8	61.5	63.9	67.0	63.5	66.8
10/31/98	68.2	60.6	61.3	61.5	62.3	62.6	60.9	0.0	60.9	57.7	51.5	59.9	62.6	57.4	62.6	63.5	62.4	67.7
AVERAGE	68.0	63.3	63.9	63.7	64.9	65.4	62.6	0.0	63.6	61.3	57.4	57.3	62.7	60.6	64.6	65.9	64.3	65.8
NO./DAYS	31	31	31	31	31	31	31	0	31	31	31	31	31	31	31	31	31	31

TABLE 2. CNEL VALUES FOR NOVEMBER 1998

	RMS NUMBER																	
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
11/01/98	69.1	64.2	65.1	65.8	66.2	67.3	63.0	OFF	65.2	56.4	52.3	58.9	63.7	61.2	65.4	67.0	65.3	66.6
11/02/98	68.7	63.0	63.6	63.8	65.7	67.7	63.4	OFF	64.2	58.6	54.3	59.0	63.2	61.1	63.8	65.6	63.8	65.5
11/03/98	68.0	63.1	63.1	65.4	65.8	66.6	62.9	OFF	62.7	62.2	57.7	58.8	62.4	60.6	63.5	65.1	63.8	65.2
11/04/98	70.4	64.5	63.7	67.9	71.4	67.7	65.9	OFF	62.1	63.3	59.2	58.7	64.0	61.4	65.4	66.3	65.5	64.3
11/05/98	67.6	59.7	60.3	67.6	67.8	70.3	65.5	OFF	60.2	61.9	58.7	57.7	59.3	59.5	60.3	67.7	60.5	64.8
11/06/98	68.6	64.0	65.1	63.8	65.2	67.7	62.5	OFF	63.4	62.9	60.4	57.7	62.0	61.7	64.5	67.8	64.2	65.4
11/07/98	65.6	62.0	62.3	59.5	63.3	63.2	58.6	OFF	62.4	59.9	55.9	60.0	60.5	59.4	61.9	64.8	61.7	66.7
11/08/98	68.2	65.2	65.9	59.0	63.1	58.5	51.0	OFF	65.3	59.9	54.2	57.3	62.5	62.1	65.4	68.4	64.9	66.6
11/09/98	67.9	56.7	57.4	68.0	68.8	71.0	65.7	OFF	61.5	58.0	54.6	61.5	58.3	57.2	57.2	65.6	57.0	65.8
11/10/98	68.7	62.1	62.3	64.2	65.3	67.3	64.9	OFF	63.7	61.4	58.6	59.8	64.1	59.8	63.7	64.2	63.9	66.1
11/11/98	68.5	65.1	65.6	66.9	66.5	65.1	61.5	OFF	64.7	60.8	55.9	58.7	64.1	62.2	65.7	67.6	65.3	66.1
11/12/98	67.5	63.5	64.4	67.6	66.7	65.4	63.0	OFF	62.6	62.1	59.4	56.7	62.4	61.2	64.5	66.3	63.7	66.7
11/13/98	68.4	63.9	64.9	65.8	66.5	65.9	62.5	OFF	63.1	62.6	58.1	59.3	62.7	61.3	64.7	67.0	64.3	65.4
11/14/98	66.3	61.0	61.7	63.4	66.8	62.9	60.0	OFF	61.0	59.3	51.9	58.3	59.5	OFF	61.8	63.7	61.7	63.7
11/15/98	67.5	63.4	64.1	63.3	64.5	58.2	52.0	OFF	65.3	60.4	59.5	59.3	61.4	OFF	64.4	65.7	63.9	66.6
11/16/98	68.7	63.2	63.4	63.5	64.9	63.1	57.9	OFF	65.3	61.3	55.5	59.6	64.3	OFF	64.5	65.4	64.5	66.4
11/17/98	69.3	65.3	64.3	66.8	68.8	66.3	63.9	OFF	63.1	63.0	58.8	57.8	64.5	OFF	65.0	67.0	64.4	66.9
11/18/98	69.1	63.0	62.1	65.4	65.4	66.3	63.0	OFF	63.2	62.0	58.1	60.3	63.2	OFF	63.6	64.0	63.5	66.6
11/19/98	67.4	61.7	61.9	65.6	65.8	66.6	62.8	OFF	62.0	60.7	60.6	57.6	60.5	OFF	62.5	63.9	62.4	67.7
11/20/98	68.3	64.0	64.1	67.2	67.9	64.8	62.6	OFF	63.1	65.0	60.5	58.5	61.8	OFF	64.4	66.5	63.7	65.9
11/21/98	64.2	59.8	61.1	61.0	63.6	60.3	60.2	OFF	60.7	56.9	49.9	57.3	58.0	OFF	60.5	63.9	59.6	64.6
11/22/98	66.0	61.6	62.0	63.3	64.7	64.5	61.4	OFF	63.3	59.5	50.1	56.4	61.3	58.3	63.8	63.6	63.6	65.0
11/23/98	67.3	62.8	62.9	63.5	63.4	64.1	62.3	OFF	63.3	60.8	60.7	58.8	62.7	59.9	64.0	65.0	63.8	66.5
11/24/98	69.0	64.6	65.4	65.1	66.2	67.4	64.3	OFF	63.7	63.3	60.1	58.0	63.6	62.2	66.1	66.7	65.6	67.8
11/25/98	67.9	64.1	64.3	65.5	65.9	66.6	62.9	OFF	64.3	62.1	58.2	61.5	62.5	61.2	65.6	65.8	65.3	66.7
11/26/98	63.6	59.2	59.5	59.4	61.0	60.2	57.7	OFF	60.2	58.4	51.5	52.2	59.4	55.3	60.6	61.4	60.3	63.9
11/27/98	67.4	61.1	61.3	62.9	63.8	61.2	57.4	OFF	63.7	60.4	59.0	58.1	62.4	57.9	63.4	63.0	62.6	64.5
11/28/98	70.2	64.2	64.5	66.2	66.2	63.5	59.2	OFF	62.8	63.1	55.5	59.4	62.6	62.4	64.8	66.0	64.6	63.9
11/29/98	68.5	64.7	65.2	60.4	63.2	61.7	55.6	OFF	66.4	55.1	47.0	59.9	64.0	61.8	66.0	67.0	65.6	67.4
11/30/98	69.2	65.3	65.8	63.7	66.9	64.7	62.0	OFF	67.8	61.8	59.8	59.8	66.0	62.1	67.7	67.6	67.7	68.1
AVERAGE	68.1	63.3	63.6	65.0	66.2	65.9	62.3	0.0	63.7	61.3	57.7	58.8	62.6	60.8	64.3	65.9	64.0	66.1
NO./DAYS	30	30	30	30	30	30	30	0	30	30	30	30	30	22	30	30	30	30

TABLE 3. CNEL VALUES FOR DECEMBER 1998

	RMS NUMBER																	
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
12/01/98	70.0	65.6	65.4	65.7	67.7	68.5	62.4	OFF	66.0	62.3	59.3	60.6	63.5	63.0	65.6	68.4	65.2	67.0
12/02/98	69.1	64.1	64.3	66.2	67.1	66.2	61.0	OFF	66.3	62.7	60.7	59.7	63.6	61.6	65.6	66.4	65.3	67.9
12/03/98	68.8	64.8	64.6	65.7	67.4	66.7	59.7	OFF	66.2	62.0	57.7	58.6	64.4	62.0	66.4	66.6	66.0	68.1
12/04/98	69.1	64.1	63.9	63.6	65.1	65.2	60.8	OFF	64.8	62.8	58.3	59.1	68.1	61.5	64.9	66.1	64.6	66.0
12/05/98	62.9	52.6	52.1	65.1	65.9	68.5	63.1	OFF	57.9	56.1	OFF	55.4	55.1	53.6	54.8	63.4	53.3	61.5
12/06/98	63.1	50.6	51.1	65.8	67.4	69.2	63.6	OFF	63.7	55.6	51.8	57.6	47.6	53.6	42.9	64.0	43.3	66.8
12/07/98	67.0	60.8	60.4	67.7	66.3	65.0	62.6	OFF	61.9	60.8	61.3	59.8	61.9	OFF	62.1	63.3	62.2	64.0
12/08/98	68.7	59.7	58.5	67.7	68.6	70.8	64.8	OFF	58.6	62.3	59.2	63.3	58.2	OFF	58.8	67.9	58.9	63.6
12/09/98	65.3	54.6	54.7	66.4	65.7	69.2	63.9	OFF	60.7	58.9	51.8	56.9	54.4	53.9	57.4	61.6	56.9	65.4
12/10/98	68.1	62.0	61.8	65.3	66.0	64.6	60.7	OFF	61.9	60.6	58.8	60.8	60.7	OFF	62.6	64.1	61.7	65.3
12/11/98	69.1	62.4	61.8	64.1	65.5	66.4	62.8	OFF	62.3	63.5	56.6	62.7	61.1	OFF	62.6	63.8	62.4	65.8
12/12/98	63.9	58.1	58.9	60.7	62.6	63.3	57.9	OFF	60.5	59.2	56.6	56.1	56.2	55.0	58.8	61.2	58.5	64.2
12/13/98	68.2	62.1	61.8	65.0	66.1	64.3	62.5	OFF	62.7	59.7	59.4	59.5	59.7	58.1	62.6	63.6	61.8	64.9
12/14/98	64.0	58.6	59.0	65.5	67.2	68.7	63.4	OFF	58.7	60.5	57.0	60.5	57.6	59.1	60.2	67.5	59.6	65.4
12/15/98	65.2	55.4	56.0	66.5	66.9	71.1	64.5	OFF	62.4	61.3	52.2	60.5	55.3	56.6	55.9	63.0	56.7	68.4
12/16/98	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
12/17/98	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
12/18/98	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
12/19/98	67.5	63.1	63.9	63.5	64.9	60.3	54.4	OFF	64.7	59.7	52.6	58.0	62.8	60.3	64.0	65.7	63.5	65.2
12/20/98	66.0	61.6	61.6	60.2	63.8	63.3	58.2	OFF	64.6	57.4	48.9	56.3	60.5	58.0	62.2	63.1	61.2	67.4
12/21/98	66.6	61.7	62.0	62.2	62.0	61.7	61.3	OFF	61.4	60.4	56.6	56.9	61.5	58.1	63.6	64.5	63.0	64.4
12/22/98	67.2	62.3	62.1	64.7	63.7	64.7	63.1	OFF	61.1	62.0	57.9	62.9	61.3	OFF	63.6	64.6	63.2	64.3
12/23/98	67.9	63.5	63.8	69.3	69.2	64.4	62.8	OFF	62.2	62.6	60.3	60.8	61.8	60.2	65.0	66.0	64.2	63.9
12/24/98	65.5	60.4	60.3	65.6	66.2	65.4	61.3	OFF	60.2	62.2	57.3	59.8	57.6	57.0	60.4	63.1	59.8	64.3
12/25/98	61.6	56.9	56.7	59.0	61.0	58.5	54.7	OFF	59.6	58.3	55.6	53.5	55.7	52.7	58.5	59.0	58.1	63.2
12/26/98	64.8	60.9	61.7	64.3	63.7	59.3	59.3	OFF	59.9	60.0	53.4	54.3	59.2	57.8	61.7	63.1	61.9	63.2
12/27/98	67.2	63.1	63.2	65.4	65.6	61.5	61.0	OFF	62.2	54.9	48.4	58.7	63.7	59.9	64.1	64.8	63.6	64.7
12/28/98	66.8	63.4	64.1	67.8	67.3	65.4	62.8	OFF	63.3	59.2	57.1	59.0	60.7	60.2	64.2	65.5	63.6	65.8
12/29/98	68.7	64.0	65.2	69.6	73.7	65.2	61.1	OFF	64.2	61.7	59.6	62.8	64.0	61.7	64.9	67.3	64.8	68.6
12/30/98	68.4	63.1	62.3	66.4	67.1	68.9	64.9	OFF	64.1	65.9	59.2	59.7	62.7	60.1	64.1	65.1	63.8	68.8
12/31/98	68.8	62.3	62.5	65.0	63.9	65.2	61.2	OFF	64.2	61.1	54.9	59.5	63.1	59.3	63.9	64.1	63.3	65.5
AVERAGE	67.3	61.9	62.0	65.7	66.8	66.5	62.0	0.0	63.0	61.1	57.5	59.7	61.6	59.3	62.9	65.0	62.4	65.9
NO./DAYS	28	28	28	28	28	28	28	0	28	28	27	28	28	23	28	28	28	28
QTR. AVG.	67.8	62.9	63.3	64.9	66.0	65.9	62.3	0.0	63.4	61.2	57.5	58.7	62.4	60.3	64.0	65.7	63.7	65.9
NO./DAYS	89	89	89	89	89	89	89	0	89	89	88	89	89	76	89	89	89	89

TABLE 4. AVERAGE CNEL VALUES

Site No.	1st Quarter 1998	2nd Quarter 1998	3rd Quarter 1998	4th Quarter 1998	4-Quarter Average
1	69.0	68.0	67.4	67.8	68.1
2	63.5	62.9	62.6	62.9	63.0
3	64.0	63.4	63.4	63.3	63.5
4	65.8	63.5	63.0	64.9	64.4
5	66.7	65.0	64.0	66.0	65.5
6	66.9	64.6	64.9	65.9	65.7
7	63.1	61.9	62.8	62.3	62.5
8	0.0	0.0	0.0	0.0	---
9	64.1	63.8	63.6	63.4	63.7
10	61.2	60.8	60.9	61.2	61.0
11	57.4	56.9	56.0	57.5	57.0
12	60.0	57.1	55.4	58.7	58.1
13	63.0	62.8	61.8	62.4	62.5
14	61.0	60.2	60.3	60.3	60.5
15	64.7	64.1	63.8	64.0	64.2
16	0.0	0.0	67.3*	65.7	---
17	63.9	63.7	63.8	63.7	63.8
18	66.3	65.4	65.5	65.9	65.8

*Only 9 days in the service

TABLE 5. WEEKLY SCHEDULED AIR CARRIER AND COMMUTER FLIGHTS FOR THE FOURTH QUARTER 1998

SCHEDULE IN EFFECT FROM 10/ 1/98 - 10/24/98

	AA DEPA MD80	AA ARRI MD80	AS DEPA MD80	AS ARRI MD80	HP DEPA B7373	HP ARRI B7373	WN DEPA B7373	WN ARRI B7373
DAY	14	7	28	28	27	27	204	184
EVENING	0	7	6	13	4	7	61	67
NIGHT	0	0	7	0	7	4	0	14
TOTAL	14	14	41	41	38	38	265	265

SCHEDULE IN EFFECT FROM 10/ 1/98 - 10/24/98

	WN DEPA B7375	WN ARRI B7375	WN DEPA B7377	WN ARRI B7377	UA DEPA B7373	UA ARRI B7373	UA DEPA B7375	UA ARRI B7375
DAY	83	83	0	0	14	7	75	66
EVENING	0	0	0	0	0	7	13	20
NIGHT	0	0	0	0	0	0	5	7
TOTAL	83	83	0	0	14	14	93	93

SCHEDULE IN EFFECT FROM 10/ 1/98 - 10/24/98

	UA DEPA B757	UA ARRI B757	QQ DEPA MD80	QQ ARRI MD80	QQ DEPA MD90	QQ ARRI MD90	COMM DEPA BRASIL	COMM ARRI BRASIL
DAY	0	0	13	13	7	7	63	63
EVENING	0	0	0	6	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0
TOTAL	0	0	19	19	7	7	63	63

SCHEDULE IN EFFECT FROM 10/ 1/98 - 10/24/98

	UPS DEPA B757	UPS ARRI B757	FE DEPA B727Q	FE ARRI B727Q	FE DEPA A300	FE ARRI A300	TOTAL DEPA	TOTAL ARRI
DAY	0	5	0	0	0	5	528	495
EVENING	5	0	0	0	5	0	94	127
NIGHT	0	0	0	0	0	0	25	25
TOTAL	5	5	0	0	5	5	647	647

TABLE 5. (CONTINUED)

SCHEDULE IN EFFECT FROM 10/25/98 - 11/17/98

	AA DEPA MD80	AA ARRI MD80	AS DEPA MD80	AS ARRI MD80	HP DEPA B7373	HP ARRI B7373	WN DEPA B7373	WN ARRI B7373
DAY	14	7	21	21	20	20	204	184
EVENING	0	7	6	13	4	7	61	67
NIGHT	0	0	7	0	7	4	0	14
TOTAL	14	14	34	34	31	31	265	265

SCHEDULE IN EFFECT FROM 10/25/98 - 11/17/98

	WN DEPA B7375	WN ARRI B7375	WN DEPA B7377	WN ARRI B7377	UA DEPA B7373	UA ARRI B7373	UA DEPA B7375	UA ARRI B7375
DAY	83	83	0	0	14	7	75	66
EVENING	0	0	0	0	0	7	13	20
NIGHT	0	0	0	0	0	0	5	7
TOTAL	83	83	0	0	14	14	93	93

SCHEDULE IN EFFECT FROM 10/25/98 - 11/17/98

	UA DEPA B757	UA ARRI B757	QQ DEPA MD80	QQ ARRI MD80	QQ DEPA MD90	QQ ARRI MD90	COMM DEPA BRASIL	COMM ARRI BRASIL
DAY	0	0	13	13	7	7	63	63
EVENING	0	0	0	6	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0
TOTAL	0	0	19	19	7	7	63	63

SCHEDULE IN EFFECT FROM 10/25/98 - 11/17/98

	UPS DEPA B757	UPS ARRI B757	FE DEPA B727Q	FE ARRI B727Q	FE DEPA A300	FE ARRI A300	TOTAL DEPA	TOTAL ARRI
DAY	0	5	0	0	0	5	514	481
EVENING	5	0	0	0	5	0	94	127
NIGHT	0	0	0	0	0	0	25	25
TOTAL	5	5	0	0	5	5	633	633

TABLE 5. (CONTINUED)

	SCHEDULE IN EFFECT FROM 11/18/98 - 12/ 1/98							
	AA DEPA MD80	AA ARRI MD80	AS DEPA MD80	AS ARRI MD80	HP DEPA B7373	HP ARRI B7373	WN DEPA B7373	WN ARRI B7373
DAY	14	7	21	21	27	27	204	184
EVENING	0	7	6	13	4	7	61	67
NIGHT	0	0	7	0	7	4	0	14
TOTAL	14	14	34	34	38	38	265	265

	SCHEDULE IN EFFECT FROM 11/18/98 - 12/ 1/98							
	WN DEPA B7375	WN ARRI B7375	WN DEPA B7377	WN ARRI B7377	UA DEPA B7373	UA ARRI B7373	UA DEPA B7375	UA ARRI B7375
DAY	83	83	0	0	14	7	75	66
EVENING	0	0	0	0	0	7	13	20
NIGHT	0	0	0	0	0	0	5	7
TOTAL	83	83	0	0	14	14	93	93

	SCHEDULE IN EFFECT FROM 11/18/98 - 12/ 1/98							
	UA DEPA B757	UA ARRI B757	QQ DEPA MD80	QQ ARRI MD80	QQ DEPA MD90	QQ ARRI MD90	COMM DEPA BRASIL	COMM ARRI BRASIL
DAY	0	0	13	13	7	7	63	63
EVENING	0	0	0	6	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0
TOTAL	0	0	19	19	7	7	63	63

	SCHEDULE IN EFFECT FROM 11/18/98 - 12/ 1/98							
	UPS DEPA B757	UPS ARRI B757	FE DEPA B727Q	FE ARRI B727Q	FE DEPA A300	FE ARRI A300	TOTAL DEPA	TOTAL ARRI
DAY	0	5	0	0	0	5	521	488
EVENING	5	0	0	0	5	0	94	127
NIGHT	0	0	0	0	0	0	25	25
TOTAL	5	5	0	0	5	5	640	640

TABLE 5. (CONTINUED)

SCHEDULE IN EFFECT FROM 12/ 2/98 - 12/14/98

	AA DEPA MD80	AA ARRI MD80	AS DEPA MD80	AS ARRI MD80	HP DEPA B7373	HP ARRI B7373	WN DEPA B7373	WN ARRI B7373
DAY	7	0	21	21	27	27	204	184
EVENING	0	7	6	13	4	7	61	67
NIGHT	0	0	7	0	7	4	0	14
TOTAL	7	7	34	34	38	38	265	265

SCHEDULE IN EFFECT FROM 12/ 2/98 - 12/14/98

	WN DEPA B7375	WN ARRI B7375	WN DEPA B7377	WN ARRI B7377	UA DEPA B7373	UA ARRI B7373	UA DEPA B7375	UA ARRI B7375
DAY	83	83	0	0	14	7	75	66
EVENING	0	0	0	0	0	7	13	20
NIGHT	0	0	0	0	0	0	5	7
TOTAL	83	83	0	0	14	14	93	93

SCHEDULE IN EFFECT FROM 12/ 2/98 - 12/14/98

	UA DEPA B757	UA ARRI B757	QQ DEPA MD80	QQ ARRI MD80	QQ DEPA MD90	QQ ARRI MD90	COMM DEPA BRASIL	COMM ARRI BRASIL
DAY	0	0	13	13	7	7	63	63
EVENING	0	0	0	6	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0
TOTAL	0	0	19	19	7	7	63	63

SCHEDULE IN EFFECT FROM 12/ 2/98 - 12/14/98

	UPS DEPA B757	UPS ARRI B757	FE DEPA B727Q	FE ARRI B727Q	FE DEPA A300	FE ARRI A300	TOTAL DEPA	TOTAL ARRI
DAY	0	5	4	0	0	5	518	481
EVENING	5	0	0	0	5	0	94	127
NIGHT	0	0	0	4	0	0	25	29
TOTAL	5	5	4	4	5	5	637	637

TABLE 5. (CONTINUED)

SCHEDULE IN EFFECT FROM 12/15/98 -

	AA DEPA MD80	AA ARRI MD80	AS DEPA MD80	AS ARRI MD80	HP DEPA B7373	HP ARRI B7373	WN DEPA B7373	WN ARRI B7373
DAY	7	0	21	21	27	27	204	184
EVENING	0	7	6	13	4	7	61	67
NIGHT	0	0	7	0	7	4	0	14
TOTAL	7	7	34	34	38	38	265	265

SCHEDULE IN EFFECT FROM 12/15/98 -

	WN DEPA B7375	WN ARRI B7375	WN DEPA B7377	WN ARRI B7377	UA DEPA B7373	UA ARRI B7373	UA DEPA B7375	UA ARRI B7375
DAY	83	83	0	0	34	27	54	48
EVENING	0	0	0	0	13	20	0	6
NIGHT	0	0	0	0	0	0	6	6
TOTAL	83	83	0	0	47	47	60	60

SCHEDULE IN EFFECT FROM 12/15/98 -

	UA DEPA B757	UA ARRI B757	QQ DEPA MD80	QQ ARRI MD80	QQ DEPA MD90	QQ ARRI MD90	COMM DEPA BRASIL	COMM ARRI BRASIL
DAY	0	0	13	13	7	7	63	63
EVENING	0	0	0	6	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0
TOTAL	0	0	19	19	7	7	63	63

SCHEDULE IN EFFECT FROM 12/15/98 -

	UPS DEPA B757	UPS ARRI B757	FE DEPA B727Q	FE ARRI B727Q	FE DEPA A300	FE ARRI A300	TOTAL DEPA	TOTAL ARRI
DAY	0	5	4	0	0	5	517	483
EVENING	5	0	0	0	5	0	94	126
NIGHT	0	0	0	4	0	0	26	28
TOTAL	5	5	4	4	5	5	637	637

TABLE 5. (CONTINUED)

FOURTH QUARTER 1998

PERIOD TOTALS FOR
AIR CARRIERS AND COMMUTERS

AIR CARRIERS

	DEP	ARR
DAY	6005	5562
EVE	1236	1667
NIGHT	331	343
TOTAL	7572	7572

COMMUTERS

	DEP	ARR
DAY	828	828
EVE	0	0
NIGHT	0	0
TOTAL	828	828

AIR CARRIERS AND COMMUTERS

	DEP	ARR
DAY	6833	6390
EVE	1236	1667
NIGHT	331	343
TOTAL	8400	8400

VI. INCOMPATIBLE LAND USE

The contours shown in Figures 1 and 2 were digitized and overlaid on a digital land use map of the area around the airport[2]. The area enclosed by the contours for incompatible land uses were computed. The incompatible land use area was 344.58 acres within the 65 dB contour and 35.47 acres within the 70 dB contour. It should be noted that these areas do not include the soundproofed schools in the airport vicinity. The soundproofed schools include the Luther Burbank Middle School, St. Patrick, and Glenwood schools. The total areas enclosed by the 65 and 70 dB CNEL contours were 1,249.0 and 506.9 acres, respectively.

The estimated numbers of residences are 1,551 within the 65 dB contour, and 160 within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 4,140 and 426 respectively. Figure 4 is a graphical depiction of land use areas inside the 65 and 70 dB CNEL contours for fourth quarter 1998.

[2] The airport maintains a digitized map of the existing land use around the airport. This data base is employed on a consistent basis in determining the land use and contour areas reported in the quarterly noise reports.

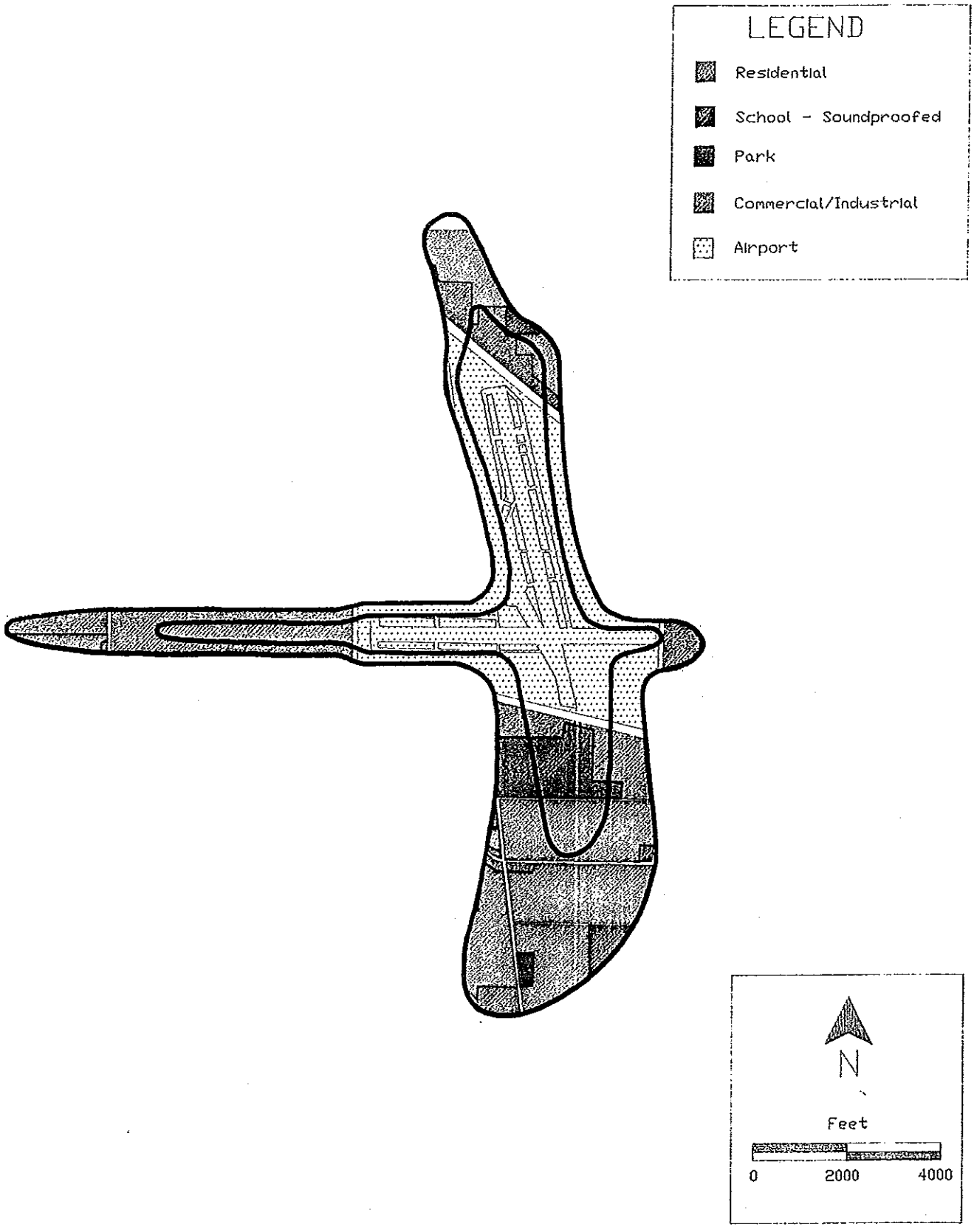

Figure 4. LAND USE AREAS INSIDE 65 AND 70 dB CNEL CONTOURS - FOURTH QUARTER 1998

REFERENCES

1. California Department of Transportation, Division of Aeronautics, "Noise Standards", California Code of Regulations, Title 21, Chapter 2.5, Subchapter 6.

2. L-30488, Department of Transportation, State of California, 27 June 1984.

3. "Quarterly Noise Monitoring at Burbank Airport, First Quarter 1998", AAAI Report 1212.

4. "Quarterly Noise Monitoring at Burbank Airport, second Quarter 1998", AAAI Report 1213

5. "Quarterly Noise Monitoring at Burbank Airport, third Quarter 1998", AAAI Report 1214

APPENDIX A
NOISE MONITOR INSTRUMENTATION

APPENDIX A
NOISE MONITOR INSTRUMENTATION

The permanent noise monitor system, manufactured by Tracor, consists of 17 remote monitoring stations (RMS) connected to a central site by telephone lines. The system block diagram showing the major elements is shown in Figure A-1. The electrical signal generated by the microphone/preamplifier assembly at each site is processed in the RMS electronics. The signal is passed through an A-weighting filter and is then detected and converted to a digital level signal in decibels with a resolution of 0.1 dB.

The digitized sound level is transmitted every half second by telephone line to the central site. The data received by the central site are processed by the computer. According to preset parameters, the noise is separated into two categories--aircraft noise and community noise. Each event attributed to an aircraft is saved in a noise event file. Computations are made of hourly noise level, community noise equivalent level, runway use, and other parameters. A wide variety of data presentations is available by exercising a number of routines provided by Tracor, as well as special-purpose routines that can be generated by the user.

The locations of the remote sites (shown in Figure 3) are listed relative to the runway thresholds in Table A-1.

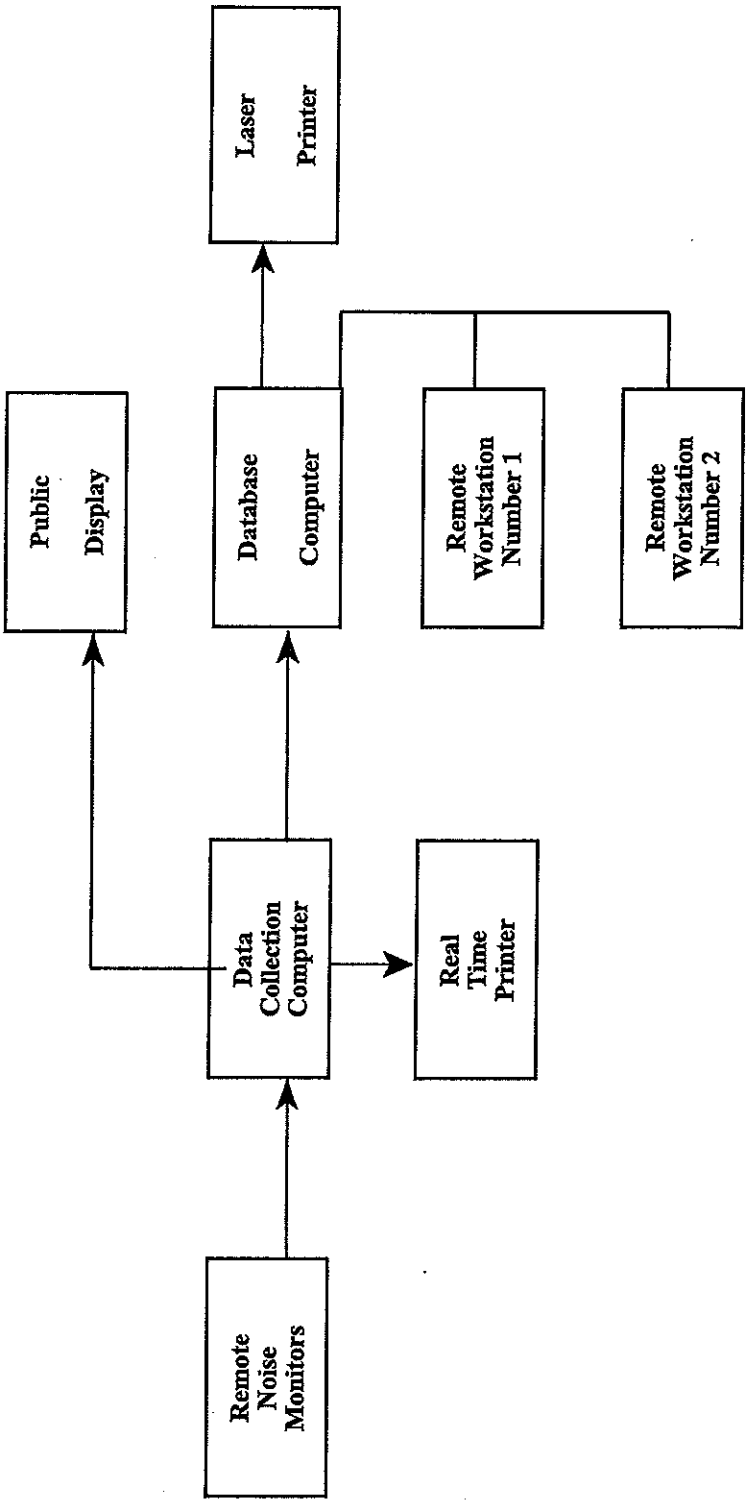

FIGURE A-1. PERMANENT NOISE MONITOR SYSTEM BLOCK DIAGRAM

TABLE A-1
NOISE MONITOR SITE LOCATIONS

Site No.	Distance From N. End of RW 15	Distance From Extended Centerline
1	8590	-1490
2	10830	1590
3	13440	-1090
4	-150	-1200
5	-810	1100
6	-3280	-740
7	-4720	-50
12	7520	-3220
13	10660	-3600
14	12780	1160
15	13380	-3920
16	11600	360
17	12900	-3520

Note: Positive distances from the runway threshold are to the south; positive distances from the extended centerline are to the east.

Site No.	Distance From W. End of RW 8	Distance From Extended Centerline
8	-5900	-820
9	-8700	220
10	8180	-800
11	8740	-110
18	-5880	-440

Note: Positive distances from the runway threshold are to the east; positive distances from the extended centerline are to the north.

APPENDIX B
CALIBRATION

APPENDIX B
CALIBRATION

The system was calibrated during setup using a Bruel and Kjaer pistonphone. Acoustic calibrations are being performed approximately every six months. Electrical calibrations are performed automatically shortly after midnight each day. Figure B-1 shows the latest calibration certificate of the pistonphone employed in the acoustic calibrations and Figure B-2 shows a typical electrical calibration.

ACOUSTICAL ANALYSIS ASSOCIATES, INC.
22148 SHERMAN WAY, SUITE 206, CANOGA PARK, CA 91303 - (818) 713-1160

CERTIFICATE OF CALIBRATION

PISTONPHONE TYPE 4220

The calibration is performed by comparison with Pistonphone Type 4220, Serial No. 80256.

Calibrated by: ODIN Date: 16 JUL 1998

If the Ambient Presssure P_a deviates from the above stated nominal value 1013 mbar a correction SPL should be added to the calibrated Sound Pressure Level.

$$SPL = 20 \times \log_{10} \frac{P_a(\text{mbar})}{1013}$$

Calibrated By: R.P. COSTELLO

Date: 2 JAN , 1999

R. Peter Costello
Acoustical Analysis Associates, Inc.
22148 Sherman Way, Suite 206
Canoga Park, CA 91303
(818) 713-1160

Serial No.: 757164

Sound Pressure Level produced in the coupler terminated by a loading volume of 1,333 cm³ at 1013 mbar, 20°C, 65% R.H.
123.90 dB re. 20µPa

Frequency: 250.7 Hz ± 0,5 Hz in "On" position.

Distortion: Less than 3%

Condition of Test:

Ambient Pressure: 990 mbar
Temperature: 24 °C
Relative Humidity: 30 %

INSTRUMENTATION USED FOR CALIBRATION

ITEM	TYPE	SERIAL NO.	CAL DATE	CAL BY	DUE DATE
MEASURING AMP	2606	586767	16 SEP 98	ODIN	16 SEP 99
B.F.OSCILLATOR	1022	466495	9 MAR 98	ODIN	9 MAR 99
SINE GENERATOR	1023	553662	16 SEP 98	ODIN	16 SEP 99
PISTONPHONE	4220	80256	16 JUL 98	ODIN	16 JUL 99
PISTONPHONE	4220	893686	11 MAR 98	ODIN	11 MAR 99
MICROPHONE *	4161	559578	23 SEP 98	ODIN	23 SEP 99
MICROPHONE *	4144	535815	23 SEP 98	ODIN	23 SEP 99

*B&K ADAPTERS DB0111 AND DD0015 USED TO SIMULATE WE640AA MICROPHONE.

```
*************************
*   Calibration Report  *
*************************

Calibration  RMS: 1  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS: 2  Passed Peak:110.1 dB @ 11/10/1995  0:06
Calibration  RMS: 3  Passed Peak:109.8 dB @ 11/10/1995  0:06
Calibration  RMS: 4  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS: 5  Passed Peak:110.1 dB @ 11/10/1995  0:06
Calibration  RMS: 6  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS: 7  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS: 8  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS: 9  Passed Peak:109.9 dB @ 11/10/1995  0:06
Calibration  RMS:10  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS:11  Passed Peak:109.9 dB @ 11/10/1995  0:06
Calibration  RMS:12  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS:13  Passed Peak:110.0 dB @ 11/10/1995  0:06
Calibration  RMS:14  Passed Peak:109.9 dB @ 11/10/1995  0:06
Calibration  RMS:15  Passed Peak:110.0 dB @ 11/10/1995  0:06
```

Figure B-2. Typical Daily Electrical Calibration